

POPLAR, FAST FIELD - GOINGS GOV'T WELL

CRACE PETROLEUM CORP MURPHY M

ENFO 205A MT00008 (GOINGS GOVT 1-D)

FY1992

U. S. ENVIRONMENTAL PROTECTION AGENCY REGION VIII

UIC PROGRAM COMPLIANCE FIELD INSPECTION REPORT

COMPANY: Murphy Oil REPRESENTATIVE: Hay Reede
ADDRESS: Box 547 Piplar, Mf 59255 PHONE: 406-768-3612
FIELD/WELL NAME: N.W. Poplar Goings Gort. #1
LOCATION: /4; SEC. /L; T2916, RSDE; COUNTY: Rousevelf STATE: Mf
RECORDS INSPECTION
1) <u>Injection Rate</u> : Max. 1638 B/D; Ave. 250 B/D; Pmt. Max. 3660 B/D
2) Inject. Pressure: Ave. 420 psig; Max. 400 psig; Pmt. Max. 8 Bpsig
3) Cumulative Injected Volume: 55,925 Bb1 Permit #: MTS 2008-2008
4) Comments:
WELLHEAD INSPECTION
General Surface Condition: (-2001) [photos, (Y)(N)]
1) Injection Rate: 1402 B/D; 2) Meter Type: And Location: (at well) (at pump)
3) Inject. Pressure: (wellhead) 330 psig; 3a)(pump) 330 psig
Range: 1000 psig Range: 1000 psig
Comments: C.P Tubing exmented in hole
to surfree
Injected Water Source: Madison Formation
Water Sampling Location/Techniques/Analyses
General Remarks/Comments Halliburton meter shows injection
12te 2+ 1402 bbls/dzy.
INSPECTOR(S): Billy B. Lane
DATE: 00 4.4 / 988

Region 8, Montana Office Federal Building 301 S. Park, Drawer 10096 Helena, Montana 59626-0098





EPA 10 No: 175 2008 - 2008

UIC PROGRAM INSPECTION REPORT

Company: Murphy 01L Date: June 6-1928
Well Name: GOINAS GOVT
Field Name: POPLAR NW County: ROWSENELT
Location of Well: T_{290} , R_{506} , Sec 11 Type of Well: SWD V ER
Type of Inspection: Routine (incl. MIT) Compliance P&A Other
Status: Active TA Other
Summary of Findings:
Gages Present: Annulus No Tubing
Pressures: Annulus o Tubing 400
Volume Totalizer:
Mfg Mod # Location Manifolded?
Sampling Tap: Location: Flo LINT
Sample Taken: No
Records Comments:
Photos Taken:
General Appearance of Site: <u>Goo</u>
Other Comments: PRUDUCTION HAVIO CALCULATED - AUNULUS GANGE USED ANLY FOR PERIODIC TESTS
AUG. 40300 BWPM
Company Rep. Notified: BEEDE Company Rep. Present: Wanger Inspected By: La Belinland (signature)

S. ENVIRONMENTAL PROTECTION A

U. S. ENVIRONMENTAL PROTECTION AGENCY

REGION VIII MTS 2008 - 200 8
2-10,11,12,13 UIC PROGRAM COMPLIANCE FIELD INSPECTION REPORT

COMPANY: Murphy Oil USA I	TA C. REPRESENTATI	IVE: Ray Reede	71.7
ADDRESS: P.O. Box 547, Poplar	59255	PHONE: 768-3611	
FIELD/WELL NAME: NW Poplar	1 Goinas G	ovt	
LOCATION: 5W /4; SEC. 11; T291	_		T
1	RECORDS INSPECTIO	<u>N</u>	
1) Injection Rate: Max.	_B/D; Ave	B/D; Pmt.Max. 3000	_B/D
2) Inject. Pressure: Ave.	psig; Max	psig; Pmt.Max875	_psig
3) Cumulative Injected Volume:	Bb1		
4) Comments:			1.50
	Market Control		
	WELLHEAD INSPECTI	ON	
General Surface Condition: 90 [photos, (Y)(N)]	trad SPCOXUE	poits prosent	
[photos, [Y](N)]	me i carre	pris pictoria	
1) Injection Rate: 1644.8 16	67.	Model MC-II	The sales of
	I nc	Type: Halliburton ation: (at well) (at pump)	
719246 total bble	۸.	sig; 3a)(pump) 300	psig
3) Inject. Pressure: (wellhead)			A Carro
. Range:	p	sig Range:	psig
Comments:			
Injected Water Source:			
Water Sampling Location/Techni	ques/Analyses		# 1/5. t
General Remarks/Comments QOI	nd ·		
deneral Remarks/comments			4 10 N
TENED IN CONTROL OF THE PARTY O	No. of the least o		Barton.
INSPECTOR(S): Herman	N .		
121 17	markets of the same	A.	,1,1,
DATE: 8-26-87			-

PAGE 3 COM	MPLIANCE CHECKLIST
PERMIT NUMBER: MTS 1008-0008 DATE:	7/6/88
I have reviewed all primary and secondary file sources.	YES NO
Operator has previously been notified of violations?	
(3) As/40 = olvises Munphy to be in compliance as Requireprent but they next no documentation-tell documentation: PREPERED BY: Sehm: 13	Permit citra Valota 2/4" the into the Sentace. to Dig roctory hand no
[NOTE: Permit conditions Part III. A., C., D., and E. intentionally been excluded from this list. The nature conditions is not related to the permittee's responsible with the permit.]	of these
	Dated 5/20/88]
The following compliance actions have taken place betwe permittee.	en the EPA and
ACTION	DATE
	/
	· · / / / /
•	/

PAGE 3

Actions may include phone calls or letters. More formal, legal actions include administrative orders and civil referrals. These legal actions will be initiated by the Direct Implementation Team Leader.

COMPLIANCE CHECKLIST PAGE 2 PERMIT NUMBER: MTS 1008-0008 DATE: тои VERIFIED IN COMPLIANCE? STANDARD PERMIT CONDITIONS APPLICABLE YES NO C. WELL OPERATION (continued) 2. Mechanical Integrity (Subsequent to Initial)
3. Injection Interval () Kd () (100 + 100 4. Injection Pressure Limitation (875 Asia 7570-11 Injection Volume Limitation (300) VEPK 1920211 Injection Fluid Limitation (Annular Fluid (D. MONITORING, RECORDKEEPING, AND REPORTING OF RESULTS Injection Well Monitoring Program Year 2. Monitoring (7520-11 3. Recordkeeping Reporting of Results Fluid Analysis (Date Annual Report (7520-1 E. PLUGGING AND ABANDONMENT 1. Notice of Plugging and Abandonment Plugging and Abandonment Plan (1520-14 NA_{-} 3. Cessation of Injection Activities 4. Plugging and Abandonment Report (7510-13) F. FINANCIAL RESPONSIBILITY 1. Demonstration of Financial Responsibility 2. Insolvency of Financial Institution WA 3. Cancellation of Demonstration by Institution WA PART III. GENERAL PERMIT CONDITIONS PERMIT ACTIONS 1. Modifications, Reissuance, or Termination DA. Conversions He face)(7520-7 Transfers (Formerly E. GENERAL DUTIES AND REQUIREMENTS Duty to Comply
 Duty to Mitigate 5. Proper Operation and Maintenance 6. Duty to Provide Information 7. Inspection and Entry (Date 8. Records of Permit Application (7520-6) 9. Signatory Requirements (Name of Author Individ

10. Reporting of Moncompliance

COMPLIANCE CHECKLIST FOR PERMITTED WELLS

WELL NAME: #1-D Goings Allotted CLAS OPERATOR: Mulphy STAF	S TYPE: (2D) 2R OTHER()
PURPOSE: To determine if non-compliance exists should be included in a formal enforce	
PRIMARY SOURCE: Blue Compliance File. SECONDARY SOURCE: Green Permit application file permit clerk, Section ADP sys	e; Section reading file; tem; 8MO
AQUIFER EXEMPTION - Date issued: NA	or Not Issued
PERMIT MODIFICATION ISSUED - Condition & Date	
NA .	
STANDARD PERMIT CONDITIONS	NOT VERIFIED IN or COMPLIANCE? APPLICABLE YES NO
PART I. AUTHORIZATION TO CONSTRUCT AND INJECT	5/23/85
PART II. SPECIFIC PERMIT CONDITIONS	
A. WELL CONSTRUCTION REQUIREMENTS 1. Casing and Cementing (10 % ** 1301; 4 h ** 0.1991' 2. Tubing and Packer Specifications (1 h ** 0.1991' 3. Monitoring Devices (150-11) (Fight h) 9-1 4. Proposed Changes and Workovers (7.520-1) 5. Formation Testing 6. Postponement of Construction	2/520-12
E. CORRECTIVE ACTION	
C. WELL OPERATION 1. Prior to Commencing Injection Well Rework Record (7570-12) Well Completion Report (7570-10) Injection Fluid Analysis Mechanical Integrity Test (Date Written Authorization by Director (Date	NA 5/12/85

ORIGE TO WELL File

COMPLIANCE FILE UPDATE CHECKLIST

Beroli

WELL NAME: MUMMITS 2008-0008 DATE: 7/6/SX
WELL NAME: MUMMITS Goings Allotted
STAFF: E. Schmitz CLASS TYPE: (2D) 2R

PERMIT RELATED DOCUMENTS

POSSIBLE SOURCES - Permit File, Section Reader File, Montana Operations Office

Copies of Checklists for Draft and Final Permits
Letter of Authorization to Inject
Copy of Permit
Copy of Statement of Basis
Copy of Aquifer Exemption

Permit Modifications
S Year Permit Reviews

OPERATOR REPORTS
POSSIBLE SOURCES - Permit File, Section ADP system, Permits
Clerk, Montana Operations Office

Annual Monitoring Reports
Fluid Analysis
Proposed Workovers
Well Rework Record
Completion Reports
MIT's
NIVY
Inspections Reports
Financial Responsibility

WELL CORRESPONDENCE Cross Reference between EPA and Permittee to find missing pieces.

OPERATOR CORRESPONDENCE
POSSIBLE SOURCES - Permit File, Montana Operations Office

Check correspondence from EPA and permittee to see if it is in response to a previous request or correspondence. If we sent a letter to permittee there may be a related letter from the permittee that should be in the correspondence sections.

File: Grace-G

MTSZIPW-0008

CC: Lawre, Pat C.

ENVIRONMENTAL PROTECTION AGENCY.

REGION VIII.
UIC PROGRAM COMPLIANCE INSPECTION REPORT.
bor't well owned by brace petroleum authorized by
Permit No. MTSZIPW-0008
DATE OF INSPECTION: 5/29/85 INSPECTOR'S NAME: ENJERT, Engle, Boyter
OWNER/OPERATOR REPRESENTATIVE: 1/One
WAS OWNER/OPERATOR REPRESENTATIVE INFORMED OF FINDINGS ON-SITE? NO.
DESCRIPTION OF PHOTOS TAKEN: None
summary of findings. The Goings Govt. Well operated by
Grace Pet. was found to be in operation.
according to chart recorder and flow meter,
the well appeared to have been in operation
stuce noon; may 28. Operating pressure was
being measured as 300 psig; Flow rate was 2020 barrels/day; and cumulative volume
was 2020 barrels / day; and cumulative volume
injected was 2644 barrels.
Laura - Alease check uf permet Conditions to
Contirm well is in Compliance. It out of compliance please inform me. Thanks-266.
flase uform me Manes - 2000
222
335
WAS NON-COMPLIAN CORRESPONDED TO THE STATE OF THE STATE O
FOLLOW-UP INITIA E 3 2 8 5 6 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
4 7



UIC PROGRAM INSPECTION REPORT

Name of Company: Grace	Date: 7/22/86
	Nell No:
	Authorization No:
Name of Field: East Poplar (County: Roosevelt
Location of Well: Sec <u>//</u> T_29N R SOE	•
Type of Inspection: RoutineCompliance	· · · · · · · · · · · · · · · · · · ·
Description of Photos Taken:	
7, 11 ::	
Summary of Findings: <u>Injecting</u> . Rate 20122 BFPD	· · ·
	Totalizer ,
T.P. 150 psii	N. 9
Halliburton Volume T.P. 150 psii : Aluminum Buildi	ng :

,	
· · · · · · · · · · · · · · · · · · ·	
•	
Company Rep. Notified: None Compan	ny Rep. Present: None
	cted by: Barry Merics
Inspec	sted by: Barry Merica

Hegion 8, Montana Office Federal Building 301 S. Park, Drawer 10096 Helena. Montana 59626-0096

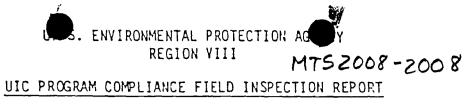




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UIC PROGRAM . INSPECTION REPORT

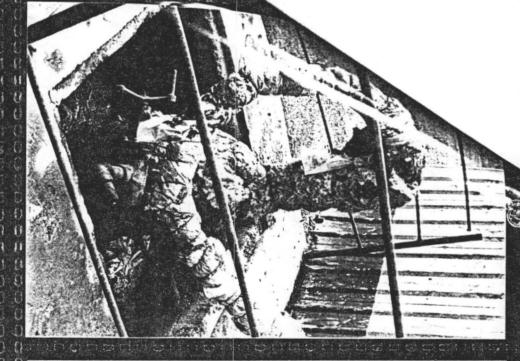
Name of Company: Grace	Date: 1-29-86 7:30 AM
Name of Well: Goings Gout	Well No: MT521PW-0008
	Authorization No:
Name of Field: East Poplar	County: Roosevelt
Location of Well: Sec // T 29N R 50E	Type of Well: SWDER
Type of Inspection: RoutineCompliance_	X P&A Other
Description of Photos Taken: None	
Summary of Findings: (1), 10 was	cting at time of inspect
(1) Injection prossure was a	econded on a Barton 7 dan
recording chart located	on the south wall. Max.
(1) Injection promise was a recording chart located reading in past 3 days closer to 306 ps;	has been 360 psi w/ Aug
CXTSUL AS 300 PS1	
(2) Has a Hallburton Total	izer Model MP-Z. Total
reading to date 339566. @ time of inspection. Fut	Totaling meter is not come
a time of inspection. Till	ling w/ were from the meter
to be connected to futter	Should be in lie.
U	
Jun Jones contract pumper & part is an order; show	
(3) Has a sampling teap	
a review of the sermit indica	ter max injection pressur
allowed is 8 25 psi. Therefore, n	o noncompliance.
Company Rep. Notified: None Comp	
Insp	ected by: WE Engle



COMPANY: USA THE REPRESENT	ATIVE: 1 19 1 2 1 1 1
	,
ADDRESS: P.O. Box 547, Poplar 59255 FIELD/WELL NAME: 1 1111111111111111111111111111111111	
LOCATION:/4; SEC; T; R/; COUNT	Y: Roosevelt STATE: MT
RECORDS INSPECT	TOU
1) Injection Rate: Max. B/D; Ave.	
	_
2) Inject. Pressure: Avepsig; Max	
3) <u>Cumulative Injected Volume</u> : Bb	₁]. ·.
4) Comments:	
WELLHEAD INSPEC	
General Surface Gondition: (1)57, 1000	up fits provide
1) Injection Rate: 16/11/1 16/15/16 2) Meter 19/15/16/16/16/16/16/16/16/16/16/16/16/16/16/	er Type: Halliburdar ocation: (at well) (at pump)
. Range:	_psig Range:psig
Comments:	
Injected Water Source:	
Water Sampling Location/Techniques/Analyses	
•	
General Remarks/Comments G. Ad	;
TUCDEOTOO(C)	i
INSPECTOR(S):	0. 4.5
DATE: 8 /10 81	

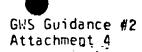


GOINGS - GOV'T # I WATER DISPOSAL WELL 660' FSL, 1980' FWL SEC. II. T 29 N. R 50 E BLA NO. 14-20-256-22









CONCURRENCES WITH USE PROGRAM FERNITTING ACTION

Signed: Branch Chief. I have reviewed the process action and that it is consistent with the property of the process action.	inç
SIGNED: DATE:	
eith UIE Program policy; and that the appropriate accountability systems have been adjusted to reflect this proposed action. EXCEPT AS FOLLOWS: Action SIGNED: Phill Cadly DATE: 307/85 As DEINTING WATER ENANCH CHIEF, I have reviewed the procosed action and find that it is consistent with UIE Program directives. The exceptions not	
EIGNED: Process policy; and that the appropriate accountability systems have been adjusted to reflect this proposed action. EXCEPT AS FOLLOWS: Action SIGNED: Process Action DATE: 307/85 As DEIN'THE MATER ERONEM CHIEF, I have reviewed the processed action and find that it is consistent with DIE Program objectives. The exceptions not	
SIGNED: PANCE CHIEF. I have reviewed the process action and that it is consistent with DATE: The exception and that the appropriate accountability systems have reviewed the process action and that it is consistent with DIC Program objectives. The exceptions not	
SIGNED: PROCESS ESPACE CHIEF. I have reviewed the processed action.	
eith UIE Program policy; and that the appropriate accountability systems have seen adjusted to reflect this proposed action. EXCEPT AS FOLLOWS:	
eth UIE Program policy; and that the appropriate accountability systems have een adjusted to reflect this proposed action. EXCEPT AS FOLLOWS:	
with the Program policy; and that the appropriate accountability systems have	
with the Program policy; and that the appropriate accountability systems have	
the <u>electric mater occupants of a control to the control of the c</u>	· E
As GERUNE WATER SECTION CHIEF. I certify that this action is consistent	.
, , , , ,	
EIGNED: 17 Sn. 417 DATE: 3/27/85	
cund and enforceable. EXCEPT AS FOLLOWS:	
ties are fire that the proposed action is within the authority of the Water aragenert Division Director, and that the proposed action is both legally	
es <u>FEVIEWING ATTORNEY</u> . I have reviewed the administrative record (cificial	
STEPLE DATE: 201/00	
STEVEN Selbra Cholen DATE: 3/27/85	
chient of the ection we consistent with others of its type. EVEST AS FOLLO	WE:
tison is written in the format consistent with current quidance, and the	
seire that the official file contains occumentation indicative of a complet polication and a thorough review. All checklists have been completed, the	E
s PIRET INCLEMENTATION TEAM LEADER, I have reviewed this permit action to	
DELL JUNIA (XVINI) CALL DELL JITA	
SIENT Saura Clemmans DATE: 3/19/85	
LLERS:	
e attached checolist describes the natur actions completed. E) IIFT AS	•
EFFRIT FFITE, I certify that this action has been taken in accordance to all till fromer regulations and quidance in force at this time; and that	÷
SCRIFTION OF FEDEREED ACTION: Final Permit MTS21PW-0008	

GW3 Guidance #2
Attachment 3
MTSQIPW-0008

FINAL PERMIT CONSIDERATIONS

A.	THE FOLLOW!	ING EVENTS	HAVE	TRANSFIRED	SINCE	THE	DRAFT	PERMIT	WAS
	RELEASED:								

YES	NO	10/25/84 Heraed News
V		10/25/84 Heraed News Futlic notice published - Date: 10/26/84 BiHmgs Greate.
		Copy of published notice received.
<u></u> _		Afficavit of publication received.
		Futilic connents received. (None)
سي		Applicant comments received.
ージ		Internal review comments received. (OCEM + ODW)
		Response to public comments completed & summary prepared.
		Fublic hearing held - Date: N/A
<u>ښر.</u>		-Final-permit-prepared.
	بسأ	Fermit denial prepared
	سيري	Operator requested to Plug & Abandon existing well. N/A

E. AS A RESULT OF PUBLIC COMMENTS, THE FOLLOWING CHANGES HAVE BEEN MADE TO THE DRAFT PERMIT:

not applicable

C. AS A RESULT OF FURTHER REGIONAL & HG REVIEW, THE FOLLOWING CHANGES HAVE BEEN MADE TO THE DRAFT PERMIT:

Condition #13 (mechanical integrity) Ras been arended to require demonstration of MI, or plugging to abanden ment to require within 60 days of permit issuance (eff. date).

Condition #11 here been amended founding sequirement.

D. AS A RESULT OF THE APPLICANT'S COMMENTS, THE FOLLOWING CHANGES THAT HAVE BEEN MADE TO THE DRAFT PERMIT:

not applicable.

E. AS A RESULT OF THE PUBLIC HEARING:

detapplicable.

U.S. Environmental Protection Agency
Underground Injection Control Program
FINAL PERMIT

Class II Salt Water Disposal Well

Zoof-Zoof

Permit # MTS21PW-0008

issued to:

Grace Petroleum Corporation 143 Union Boulevard, Suite 760 Lakewood, Colorado 80228

Date Prepared: March 8, 1985

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	•	

Attachment A (Plugging and Abandonment Plan) Attachment B (Downhole Schematic)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

1860 LINCOLN STREET DENVER, COLORADO 80295

FINAL

UNDERGROUND INJECTION CONTROL PERMIT

Permit Number:MTS21PW-0008

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U.S.C. 300f-300j-9, commonly known as SDWA) and attendant regulations incorporated by the U.S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

Grace Petroleum Corporation

is authorized to inject waste brine fluids into the Goings Government #1 well, located in the SW quarter of Section 11, Township 29N, Range 50E of Roosevelt County, Montana, into the Dakota Formation, in accordance with conditions set forth herein. This permit does not constitute Bureau of Land Management (BLM) approval for subsurface injection. Applicant needs to contact BLM to determine if changes need to be made to the BLM permit.

All conditions set forth herein refer to Title 40 Parts 144, 146, and 147 of the Code of Federal Regulations and are regulations that are in effect on the date that this permit is effective.

This permit and the authorization to inject are issued for the operating life of the well but shall be reviewed at least every five years.

Signed and effective this <u>29th</u> day of <u>March</u>, 1984.

Max H. Dodson, Director ; Water Management Division

Page 2 of 10 Permit No.: MTS21PW-0008

PART I. GENERAL PERMIT CONDITIONS

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The underground injection activity, otherwise authorized by this permit or rule, shall not allow the movement of fluid containing any contaminant into underground sources of drinking water. if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 142 or otherwise adversely affect the health of persons. Any underground injection activity not authorized in this permit or otherwise authorized by permit or rule is prohibited. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any enforcement action brought under Part C and the imminent and substantial endangement provisions in Part D of the Safe Drinking Water Act (SDWA), or any other law for any imminent and substantial endangerment to human health or the environment, or for any breach of any other applicable legal duty.

B. PERMIT ACTIONS

- 1. Modification, Reissuance, or Termination. This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR Sections 144.39, 144.40, and 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.
- 2. Transfers. This permit is not transferrable to any person except after notice is sent to the Regional Administrator and the requirements of 40 CFR 144.38 are complied with. The Regional Administrator may require modification or revocation of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under SDWA.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

Page 3 of 10 Permit No.: MTS21PW-0008

D. GENERAL DUTIES AND REQUIREMENTS

- l. Duty to Comply. The permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.
- 2. Penalties for Violations of Permit Conditions. Any person who violates a permit condition is subject to a civil penalty not to exceed \$5,000 per day of such violation. Any person who willfully or negligently violates permit conditions is subject to a fine of not more than \$10,000 per day of violation in lieu of the civil penalty previously stated.
- 3. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- 4. <u>Duty to Mitigate</u>. The permittees shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.
- 5. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.
- 6. Duty to Provide Information. The permittee shall furnish the Regional Administrator, within a time specified, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

Page 4 of 10 Permit No.: MTS21PW-0008

7. <u>Inspection and Entry</u>. The permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this pennit;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- (d) Sample or monitor, at reasonable times, for the purposes of assuring penmit compliance or as otherwise authorized by SDWA any substances or parameters at any location.

8. Records.

- (a) The permittee shall maintain records of all data required to complete the permit application and any supplemental information submitted for a period of three (3) years from the effective date of this permit. This period may be extended by request of the Regional Administrator at any time.
- (b) The permittee shall retain records concerning the nature and composition of all injected fluids until three (3) years after the completion of plugging and abandonment in accordance with the plugging and abandonment plan, Attachment A. The permittee shall continue to retain the records after the three year retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.
- (c) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit for a period of at least five (5) years from the date of the sample, measurement or report. This period may be extended by request of the Regional Administrator at any time.

Page 5 of 10 Permit No.: MTS21PW-0008

- (d) Records of monitoring information shall include:
 - (i) The date, exact place, the time of sampling or measurements;
 - (ii) The individual(s) who performed the sampling or measurements;
 - (iii). The exact sampling method(s) used to take samples.
 - (iv) The date(s) laboratory analyses were performed;
 - (v) The name(s) of the individual(s) who performed the analyses;
 - (vi) The analytical techniques/methods and types of lab procedures used; and
 - (vii) The results of such analyses.
- 9. <u>Signatory Requirements</u>. All reports or other information requested by the Regional Administrator shall be signed and certified according to 40 CFR 144.32.
 - 10. Reporting Requirements.
 - (a) PLANNED CHANGES. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility.
 - (b) ANTICIPATED NONCOMPLIANCE. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
 - (c) COMPLIANCE SCHEDULES. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.
 - (d) TWENTY-FOUR HOUR REPORTING.
 - (i) The permittee shall report to the Regional Administrator any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:
 - (a) Any monitoring or other information which indicates that any contaminant may cause endangerment to an underground source of drinking water.
 - (b) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Page 6 of 10 Permit No.: MTS21PW-0008

- (ii) A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- (e) OTHER NONCOMPLIANCE. The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition 10(d)(ii).
- (f) OTHER INFORMATION. Where the permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, the permittee shall submit such facts or information within 2 weeks of the time such information became known to him.
- (h) ANNUAL REPORT. The permittee shall submit an annual report to the Regional Administrator summarizing the results of the monitoring required by permit condition 19. Such report shall include monthly records on injected fluids, and any major changes in characteristics or sources of injected fluid. The annual report shall cover the period from January 1 to December 31 and shall be submitted by February 15 each year.

Page 7 of 10 . The Permit No.: MTSZIPW-0008

PART II. SPECIFIC PERMIT CONDITIONS

E. CORRECTIVE ACTION

If at any time it is discovered that injection activities have caused fluid migration through any well bore within the area of review, the permittee shall notify the Regional Administrator as specified in Condition 10(d). In addition, the permittee shall halt injection activities immediately and take such corrective action as prescribed by the Regional Administrator.

The permittee shall not recommence injection until all corrective action has been taken in accordance with a compliance schedule prescribed by the Regional Administrator and approval has been subsequently received from the Regional Administrator.

F. WELL CONSTRUCTION, OPERATION AND MONITORING REQUIREMENTS

11. Casing and Cementing Requirements. Prior to commencing injection, the permittee must demonstrate to the satisfaction to the Regional Administrator that the location and integrity of the cement bonds effectively isolate the injection zone, and that the injection fluid is moving only into the designated injection zone. The permittee shall do so by performing and submitting to EPA an injection profile (radioactive tracer and temperature survey), and a profile showing adequate bonding of the cement using a bond log or cement evaluation tool. In addition, the permittee shall supply proof that the cement top between the wellbore and the 4 1/2 inch casing occurs at 2240' by means of a cement bond log or other method deemed acceptable by EPA.

The permittee shall maintain compliance with the construction requirements found in 40 CFR Section 146.22 for the life of the well.

- 12. <u>Monitoring Devices</u>. The operator shall provide and maintain in good condition:
 - (a) a tap on the discharge line downstream of the injection pump and between the surge/storage tank an dthe well head for purposes of obtaining representative samples of the injection fluids, and
 - (b) a one-half (1/2) inch iron pipe size (IPS) female fitting with a cut-off valve on the injection casing so that a gauge having a one-half (1/2) inch male fitting can be attached to observe/measure the injection pressure.
 - (c) a flow rate/cumulative volume meter installed downstream of the injection pump and upstream of the wellhead to provide a record of the volume rate of flow and cumulative volume of the injected fluids.

13. Mechanical Integrity.

(a) INITIAL DEMONSTRATION. A mechanical integrity test must be performed in accordance with 40 CFR Section 146.8, and the integrity of the well must be demonstrated to the satisfaction of the Regional Administrator within thirty (30) days of the effective date of this permit and prior to commencing injection.

Page 8 of 10 Permit No.: MTS21PW-0008 b) FAILURE TO DEMONSTRATE MECHANICAL INTEGRITY. If the permittee fails to demonstrate the integrity of the well in accordance with Permit Condition 13(a) or 13(b)(i), below, he shall do one of the following: (i) Submit a workover plan to EPA, perform the workover as approved by EPA, and demonstrate mechanical integrity of the well to the satisfaction of the Regional Administrator by performing a successful mechanical integrity test in accordance with 40 CFR Section 146.8 within sixty days of the effective date of the permit, or: (ii) Plug and abandon the well in accordance with the plugging and abandonment plan (Attachment A), which was submitted as part of the permit application, within sixty (60) days of the effective date of the permit. (c) SUBSEQUENT DEMONSTRATIONS. A demonstration of mechanical integrity in accordance with 40 CFR 146.8 shall be made every five years from the effective date of this permit. The permittee shall notify the Regional Administrator of his intent to demonstrate mechanical integrity at least 30 days prior to such scheduled demonstration. Results of the test shall be submitted to the Regional Administrator as soon as possible but no later than 60 days after the demonstration. The permittee may continue operations only if the well has demonstrated mechanical integrity, otherwise injection activities shall be halted. (d) LOSS OF MECHANICAL INTEGRITY. If the well fails to demonstrate mechanical integrity during a test, or a loss of mechanical integrity as defined by 40 CFR Section 146.8 becomes evident during operation, the permittee shall notify EPA in accordance with Permit Condition 10 (d). Operation shall not be resumed until the permittee has taken the necessary actins to restore integrity to the well and EPA gives approval to recommence injection. (e) Mechanical integrity tests shall be performed using noncorrosive fluids consisting of either fresh water or corrosion inhibited formation fluid from the production zone. 14. Injection Interval. (a) Injection shall be limited to the Dakota Formation in the subsurface interval between 3630 ft. and 3830 ft. (b) Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited. 15. Injection Pressure Limitation. (a) Injection pressure, measured at the surface, shall not exceed 875 pounds per square inch (psi). (b) Injection at a pressure which initiates fractures in the confining zone or causes the movement of injection or formation fluids into an underground source of drinking water is prohibited.

Page 9 of 10 Permit No.: MTS21PW-0008

16. <u>Injection Rate Limitation</u>. The rate of produced brine wastes to be injected into the well will be limited to 3000 barrels per day.

- 17. <u>Injection Fluid Limitation</u>. The permittee shall not inject any hazardous substances, per 40 CFR Part 261, at any time during the operation of the facility, and further, no substances other than those noted in the permit application shall be injected.
- 18. Annular Fluid. The annulus between the tubing and casing sall be filled with a corrosion inhibited, 2% potassium chloride solution or other fluid as approved by EPA.

19. Monitoring Requirements.

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall identify the types of tests and methods used to generate the monitoring data.
- (b) Injection fluid analysis The nature of injection fluids shall be monitored:
 - (1) quarterly for Total Dissolved Solids, major ions, and PH.
 - (2) whenever there is a change in the source of injection fluids. A comprehensive water analysis equivalent to that submitted with the permit application shall be submitted to the Regional Administrator within 30 days of any change in injection fluids.
- (c) Injection pressure, flow rate and cumulative volume Injection pressure, flow rate and cumulative volume shall be observed weekly. At least one observation of injection pressure, flow rate, and cumulative volume, shall be recorded at regular intervals no greater than 30 days apart.

G. PLUGGING AND ABANDONMENT

- 20. Notice of Plugging and Abandonment. The permittee shall notify the Regional Administrator 30 days before conversion or abandonment of the well.
- 21. Plugging and Abandonment Plan. The permittee shall plug and abandon the well as provided in the plugging and abondonment plan. See Attachment A. Permittee will abandon the well in a state of static equilibrium with mud weight equalized top to bottom in accordance with 40 CFR Section 146.10(c). EPA reserves the right to change the manner in which the well will be plugged if the well is not proven to be consistent with the EPA requirements for construction and mechanical integrity as discussed in conditions 11 and 13 of this permit.

Page 10 of 10 Permit No.: MTS21PW-0008

22. Plugging and Abandonment Report. Within 60 days after plugging the well, the permittee shall submit a report to the Regional Administrator. The report shall be certified as accurate by the person who performed the plugging operation and the report shall consist of either: (1) a statement that the well was plugged in accordance with the plan (see Condition 20); or (2) where actual plugging differed from the plan, specifying the different procedures used.

H. FINANCIAL RESPONSIBILITY

- CIAL RESPONSIBILITY

 (a) The blanket surety performance bond (124961055) and standby trust agreement submitted by Grace Petroleum Corporation have been incorporated as part of this permit.
 - Permittee shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug, and abandon the underground injection well. Failure to do so will be grounds for termination of this permit and authorization to inject.
- 24. Insolvency of Financial Institution: In the event of the bankruptcy of the trustee or issuing institution of the financial mechanism, or a suspension or revocation of the authority of the trustee institution to act as trustee or the institution issuing the financial mechanism to issue such an instrument, the permittee must submit an alternative demonstration of financial responsibility acceptable to the Regional Administrator within 60 days after such event.

SEPA

PLUGGING AND ABANDONMENT PLAN

NAME AND ADDRESS OF FACILITY						NAME AND ADDRESS OF OWNER/OPERATOR							
Going Government SWD #1					Grace Petroleum Corporation								
NW	Poplar Field	1					143	Union Bl	vd - Ste	e 760			
Roc	Roosevelt County, MT Lakewood, CO. 80228												
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K-+	980												
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SIZE	WT(LB/FT)	TO BE PUT IN WEL	LIFTI TO E	E LEFT IN W	VELL (FT)				ump Bailer Method				
10-3/4	40.3	1302		1302	V	1		[] The Two-Plug Method					
7	26	6122		2511. 9				Other					
4-1/	10.5,9.5	4016		4016 - 1 7-7/			7./8						
						-							
CEMENTING TO PLUG AND ABANDON DATA PLUG #1						PLUG #2	Pt.UG #3	PLUG #4	PLUG N5	PLUG #6	PLUG #7		
Size of Hole or Pipe in which Plug Will Be Placed (inches) 4-1/2 1						10-3/4	4-1/2	4-1/2					
-	Bottom of Tutning or Dr				385		100	1350	100				
-	Coment To Be Used (e.				2		38	8	8				
Slurry Volume To Be Pumped (cu. ft.)					22.1		43.5	9.1	9.1				
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Measured Top of Plug (if tagged ft.)					16		15 0	15.8	15.8				
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submitted in this document and ell attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144-32)

SIGNATURE

NAME AND OFFICIAL HILL (Please type or print)

James E. Johnson

District Operations Manager

Xww Firm

9.7-84

COINGS GOVENMENT NOW HI NW POPLAR FIELD

DOWN HOLE SCHENATIC

____ Surface -CEHENT 103/4° 40.5 # CHT'd @ 1302' (900 5K) Aunulus Fluid whilited Brine WATER . TOP OF CONEUT OF 41/2" CSG 10. 2240 236" tobing with packer SET @ 3543' 41/2" 10.5 \$ 9.5 \$ J-55 CHI'd @ 4016 (150 SX) CEMENT 7" 23 # 26 # 5hB w/ top@ 3611' - DAKOTA FORMATION PERFERATIONS: 3636-3716 3864-3830' 4½" C& G PBTD @ 3997 . NOTE: Duning original abandoument, 7" cec was ent-off of polled @ 3611'. Upon of 41/2" casing was run inside 7" caring stors. The 41/2" cs q was exacted Fig. from 3997 to 2240'.

ADDENDUM TO STATEMENT OF BASIS Date Prepared: March 25, 1985

GRACE PETROLEUM CORPORATION

GOINGS GOVERNMENT #1, ROOSEVELT COUNTY, MONTANA

UIC PERMIT NUMBER MTS21PW-0008

CONTACTS:

Laura Clemmens U.S. EPA, Region VIII Ground Water Section 1860 Lincoln Street Denver, Colorado 80295 Telephone: (303) 293-1419 LAWIRONMENTAL PROTECTION AGENCY
APR U 2 1985
MONTANA GFFICE

William Engle
U.S. Environmental Protection Agency, Montana Office
Federal Office Building
301 South Park
Helena, Montana 59626-5414
Telephone: (406) 449-5414

BACKGROUND:

The permit was issued in draft form over four months ago. A number of changes have been made to the draft permit based on EPA's internal review and information obtained from Grace with regard to the lack of mechanical integrity of the well. These changes were necessary in order to guarantee that USDWs within the vicinity will be adequately protected. The issuance of the final permit has been delayed due to numerous and conflicting reports on the condition of the well since submittal of the original permit application in August of 1984.

The Goings Government #1 well has been shut-in since September 28, 1985. When a well is shut-in, especially when the integrity of the well is in question, there is some chance of migration of fluids into overlying USDWs.

CHANGES TO PERMIT:

Because it is imperative that USDWs be protected, EPA is using the permit process to guarantee either satisfactory operation or plugging and abandonment of the Goings Government #1 Well.

STATEMENT OF BASIS GRACE PETROLEUM CORPORATION GOINGS GOVERNMENT #1, ROOSEVELT COUNTY, MONTANA UIC PERMIT NUMBER MTS21PW-0008 CONTACTS: Laura Clemmens U.S. EPA, Region VIII Ground Water Section 1860 Lincoln Street Denver, Colorado 80295 Telephone: (303) 844-2731 William Engle U.S. Environmental Protection Agency, Montana Office Federal Office Building 301 South Park Helena, Montana 59626-5414 Telephone: (406) 449-5414 DESCRIPTION OF FACILITY AND BACKGROUND INFORMATION Grace Petroleum Corporation is currently injecting water into the Goings Government #1 from 13 wells producing from the Charles Formation as follows: Baker Coulter #11; Buck Elk #1; Cowan Western; Cut Hair; Goings #1-10; Iron Bear #2; Iron Bear #4; Reid #10-1; Richards #1-2; Richards #1-3; War Club #1-R: War Club #2: and the Zimmerman #1. The Goings Government #1 has been injecting the produced fluids into the Dakota Formation since May 1, 1977. There are no known drinking water wells within the area of review. Grace Petroleum Corporation has supplied all required information and data necessary for permit issuance in accordance with 40 CFR Parts 144, 146. and 147, and a draft permit has been prepared. The permit will be issued for the operating life of the injection well, therefore, no reapplication will be necessary unless the permit is terminated for reasonable cause (40 CFR 144.39, 144.40, and 144.41). However, the permit will be reviewed every five years, and may be reopened at any time should allegations of endangerment arise. This Statement of Basis gives the derivation of the site-specific permit conditions and reasons for them. The general permit conditions for which the content is mandatory and not subject to site-specific differences (based on 40 CFR Parts 144, 146, and 147), are not included in the following discussion.

MONITORING DEVICE (Condition 11)

In order to allow a representative of EPA to inspect the well and take injection pressure measurements, we are requiring that the operator install an one-half inch fitting to 1) the tubing and 2) the tubing/casing annulus.

MECHANICAL INTEGRITY (Condition 12)

EPA has reviewed well logs and workover reports from the Montana Oil and Gas Commission for the Goings Government #1. The well was originally constructed in 1953, as a producer in the Charles 'C' zone (6052'-6062'). In

EPA has reviewed well logs and workover reports from the Montana Oil and Gas Commission for the Goings Government #1. The well was originally constructed in 1953, as a producer in the Charles 'C' zone (6052'-6062'). In 1969, the well was plugged and abandonded. In the course of abandoning the well, the 7" production string was cut and pulled out of the hole, leaving a stub top at 3611'. It is not clear from the workover or abandonment report whether or not the 7" stub was cemented from the total depth up to 3611'. Our records indicate that it is not. The initial completion of the well entailed cementing the 7" casing into place at a TD of 6123' with 150 sacks of cement. In a 9" hole, the height of the cement column only reaches to approximately 5136'. Therefore, we assume that the 7" casing is uncemented from 3611' down to 5136'. The formations exposed in this uncemented interval are relatively impermeable (determined from the well log), nonetheless the well cannot be declared to have integrity until it has been demonstrated that the perforation interval is isolated by cement.

The well was reentered in 1977 and converted to a water disposal well. The current well configuration is included as Attachment B. This schematic, as submitted by the applicant, indicates that the 7" casing is cemented from 3611' to the TD of the well. The burden of proving that: 1) there is a good cement bond between the 4 1/2 inch/7 inch casing annulus and; 2) there is a good cement bond between the entire 7 inch/wellbore annulus; and 3) that the plugged back total depth of 3997' has integrity, lies with the applicant. To prove that the injection zone (3630'-3830') is isolated by cement bonds, and will not allow the migration of injection fluid up or down the well bore the applicant must, prior to commencing injection, perform one of the following:

- 1. Injection profile by temperature survey and radioactive tracer. This profile must show unequivocally that the injection fluid moves into the Dakota ONLY through the designated perforations.
- 2. Prove(by cement bond logs and cementing records) that the 7" stub has been cememted from the TD to the top of the stub, and that the cement bond has integrity.
- 3. If the applicant cannot prove to EPA's satisfaction that the injection zone has integrity, then the applicant must run a block squeeze to effectively seal off the injection zone from any communication with other zones, found either along the well bore or, within the old casings.

Because the surface casing is cemented through the Judith River Formation, 50' into the Clagget Shale, the uppermost potential USDW's are considered safe from possible contamination as long as all the cement bonds have and maintain integrity. The injection fluid will exit through the string of 2 7/8" tubing set with a packer above the perforations at 3543' and out the perforation interval of 3630'-3830'. However, EPA connot allow continued injection into this well until it has been determined that it has mechanical integrity along the well bore from the surface to the TD of the well. The downhole schematic indicates that the top of the 4 1/2" casing cement is 2240'. Because the location and integrity of the cement bond is so vital to the protection of USDW's, the applicant must also supply proof that the cement top in the 9" hole-4 1/2" casing annulus is 2240', prior to the effective date of the permit. (Condition 13) INJECTION INTERVAL The Dakota formation has been exempted in a 1/4 mile radius of the wellbore of the Goings Government well as a USDW. In addition, the applicant has been injecting fluid of almost 200,000 TDS into the well since May, 1977.

The Dakota formation has been exempted in a 1/4 mile radius of the wellbore of the Goings Government well as a USDW. In addition, the applicant has been injecting fluid of almost 200,000 TDS into the well since May, 1977. Therefore, a representative sample of the ambient water quality of the Dakota is not possible. However, the Montana Oil and Gas Commission has indicated that USDW's in the area occur above the Bearpaw Shale. Those aquifers are protected from migration by the surface casing which is set at 1300'.

INJECTION PRESSURE

(Condition 14)

According to 40 CFR Section 147.1353, the value for maximum allowable injection pressure may be determined by using the following calculation:

Pm = (0.733 - 0.433 Sg)d

Where Pm = injection pressure at the wellhead in pounds per square inch Sg = specific gravity of injection fluid (unitless) d = injection depth in feet

The specific gravity of the injection fluid, taken from the water analysis is 1.145, and the depth of the injection zone is 3830'. Using the above-referenced formula, the calculated maximum allowable injection pressure is 908 psi. The permittee has requested a maximum injection pressure of 875 psi. Therefore, the maximum pressure stated in permit condition 17 is considered safe, and is not expected to initiate any fractures in the injection or confining zones.

INJECTION VOLUME LIMITATION

(Condition 15)

Current practice involves the injection of an average volume of 1550 barrels per day, with a maximum volume of 3000 barrels per day. The operator may continue to inject these volumes. However, at no time may the operator inject at a higher pressure than the maximum specified in permit condition 17 in order to maintain these volumes.

MONITORING REQUIREMENTS

(Condition 16)

The permittee is required to monitor water quality of the injection fluids at reasonable intervals. A water sample of injected fluids shall be analyzed for Total Dissolved Solids, major ions, and pH at quarterly intervals.

The permittee is also required to submit a comprehensive water quality analysis whenever the source of the injection fluid changes.

PLUGGING AND ABANDONMENT PLAN

(Condition 18)

The plugging and abandonment plan submitted by the applicant with the permit application is incorporated into the permit and shall be binding on the permittee. In addition, the requirement stating that the well should be abandonded in a state of static equilibrium was not addressed in the submitted Plugging and Abandonment Plan, that condition has been incorporated into the permit by reference. The plugging and abandonment plan submitted by the applicant and included as attachment A will be considered satisfactory only after the permittee has proven that the well has been cemented in a manner consistent with EPA requirements for mechanical integrity as discussed in condition 10 of this permit.

FINANCIAL RESPONSIBILITY

(Condition 20)

The bond currently held by the aplicant for plugging the well names the State of Montana as beneficiary, not EPA. EPA intends to deliver guidance to the permittee on the type, amount, and mechanism required by permittees to maintain Financial Responsibility in accordance with EPA policy. Therefore, the permit requires the permittee to maintain the current bond for a period of at least ninety (90) days from the effective date of the permit during which time guidance will be provided and the permittee will be required to secure a new bond or other sufficient instrument naming EPA as beneficiary.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

1860 LINCOLN STREET DENVER, COLORADO 80295

PUBLIC NOTICE

DRAFT UNDERGROUND INJECTION CONTROL PERMITS

EPA Region VIII is currently reviewing applications for three UIC permits from Grace Petroleum Corporation of 143 Union Boulevard, Suite 760, Lakewood, Colorado, 80228. All three wells are located in Roosevelt County, Montana. Information specific to each well follows:

- 1) The EPU 110-XD is located in the SE quarter of Section 10, Township 28N, Range 51E. Grace Petroleum Corporation has been injecting produced water from the Nisku and Charles Formations through the EPU 110-XD into the Mission Canyon Formation at a depth of approximately 6300'. The well has been injecting since October, 1973.
- 2) The Goings Government #1 is located in the SW quarter of Section II, Township 29N, Range 50E. Grace Petroleum Corporation has been injecting produced water from the Charles Formation into the Dakota Formation at a depth of approximately 3700'. The well has been injecting since May, 1979.
- 3) The Buck Elk #2 is located in the NW quarter of Section 7, Township 29N, Range 51 E. The Buck Elk #2 has been injecting produced water from the Charles Formation into the Judith River Formation at a depth of approximately 1150 feet. The Buck Elk is used as a standby well and has been injecting sporadically since December, 1967.

All three wells were existing at the time of the inception of the EPA Underground Injection Control Program, therefore, aquifer exemptions were granted for a 1/4 mile radius of the well bore of each well. An aquifer exemption allows the injection of oil and gas related brines into an aquifer that is otherwise considered an Underground Source of Drinking Water.

Grace Petroleum Corporation has supplied all the required information and the data necessary for permit issuance. EPA has reviewed this information and is hereby issuing notice of intent to issue permits to inject to the EPU 110-XD, the Goings Government #1, and the Buck Elk #2.

Environmental Protection Agency Montana Office Attention: John Wardell Federal Office Building Drawer 10096 301 South Park Helena, Montana 59626-0026 Telephone: (406) 449-5432

Environmental Protection Agency Region VIII Ground Water Section Attention: Laura Clemmens 1860 Lincoln Street Denver, Colorado 80295 Telephone: (303) 844-2731

Public comments are encouraged and will be accepted in writing until November 26, 1984. A public hearing will be held at the EPA office in Helena on November 28, 1984, at 10:00 A.M. The hearing will be cancelled if sufficient interest is not shown. Those planning on attending the hearing should contact either the Denver or Helena offices of EPA by Monday, November 26, to determine if the hearing will be held.

ADDENDUM TO STATEMENT OF BASIS Date Prepared: March 25, 1985

GRACE PETROLEUM CORPORATION

GOINGS GOVERNMENT #1, ROOSEVELT COUNTY, MONTANA

UIC PERMIT NUMBER MTS21PW-0008

CONTACTS:

Laura Clemmens U.S. EPA, Region VIII Ground Water Section 1860 Lincoln Street Denver, Colorado: 80295 Telephone: (303) 293-1419

William Engle
U.S. Environmental Protection Agency, Montana Office
Federal Office Building
301 South Park
Helena, Montana 59626-5414
Telephone: (406) 449-5414

BACKGROUND:

The permit was issued in draft form over four months ago. A number of changes have been made to the draft permit based on EPA's internal review and information obtained from Grace with regard to the lack of mechanical integrity of the well. These changes were necessary in order to guarantee that USDWs within the vicinity will be adequately protected. The issuance of the final permit has been delayed due to numerous and conflicting reports on the condition of the well since submittal of the original permit application in August of 1984.

The Goings Government #1 well has been shut-in since September 28, 1985. When a well is shut-in, especially when the integrity of the well is in question, there is some chance of migration of fluids into overlying USDWs.

CHANGES TO PERMIT:

Because it is imperative that USDWs be protected, EPA is using the permit process to guarantee either satisfactory operation or plugging and abandonment of the Goings Government #1 Well.

t

The following specific changes have been made:

- 1.) Condition 11 Casing and Cementing Requirements. Because the main objective of the UIC program is the protection of underground sources of drinking water (USDWs), EPA is requiring that Grace prove that injection fluids are limited to the injection zone and therefore will not migrate into potential USDWs. Grace must make such demonstration by performing certain tests on the Goings Government #1 as specified in the permit. Results of the tests must be submitted and accepted by EPA as proof of non-migration before injection will be allowed.
- 2.) Condition 13 Mechanical Integrity. This condition has been carefully worded to ensure that if mechanical integrity cannot be demonstrated to the satisfaction of the Regional Administrator within thirty (30) days of the effective date of the permit, the permittee is obligated (within sixty (60) days) to either:
 - a. submit a workover proposal that is satisfactory to EPA, perform the work, and prove mechanical integrity of the well; or
 - b. properly plug and abandon the well.
- 3.) Condition 23 Financial Responsibility. EPA required Grace Petroleum to obtain a surety bond to guarantee the availability of the financial resources to close, plug and abandon the Goings Government #1. The changes to the condition reflect Grace Petroleum's attainment of a blanket surety bond and standby trust, and the incorporation of the bond into the permit.

STATEMENT OF BASIS

GRACE PETROLEUM CORPORATION

GOINGS GOVERNMENT #1, ROOSEVELT COUNTY, MONTANA

UIC PERMIT NUMBER MTS21PW-0008

CONTACTS:

Laura Clemmens
U.S. EPA, Region VIII
Ground Water Section
1860 Lincoln Street
Denver, Colorado 80295
Telephone: (303) 293-1419

William Engle U.S. Environmental Protection Agency, Montana Office Federal Office Building 301 South Park Helena, Montana 59626-5414 Telephone: (406) 449-5414

DESCRIPTION OF FACILITY AND BACKGROUND INFORMATION

Grace Petroleum Corporation is proposing to inject water into the Goings Government #1 from 13 wells producing from the Charles Formation as follows: Baker Coulter #11; Buck Elk #1; Cowan Western; Cut Hair; Goings #1-10; Iron Bear #2; Iron Bear #4; Reid #10-1; Richards #1-2; Richards #1-3; War Club #1-R; War Club #2; and the Zimmenman #1. The Goings Government #1 was injecting the produced fluids into the Dakota Formation between May 1, 1977 and September 28, 1984. There are no known drinking water wells within the area of review.

Grace Petroleum Corporation has supplied all required information and data necessary for permit issuance in accordance with 40 CFR Parts 144, 146, and 147, and a permit has been prepared.

The permit will be issued for the operating life of the injection well, therefore no reapplication will be necessary unless the permit is terminated for reasonable cause (40 CFR 144.39, 144.40, and 144.41). However, the permit will be reviewed every five years, and may be reopened at any time should allegations of endangement arise.

This Statement of Basis gives the derivation of the site-specific permit conditions and reasons for them. The general permit conditions for which the content is mandatory and not subject to site-specific differences (based on 40 CFR Parts 144, 146, and 147), are not included in the following discussion.

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CASING AND CEMENTING

(Condition 11)

EPA has reviewed well logs and workover reports from the Board of Oil and Gas Conservation of the State of Montana for the Goings Government #1. The well was originally constructed in 1953, as a producer in the Charles 'C' zone (6052'-6062'). In 1969, the well was plugged and abandonded. In the course of abandoning the well, the 7" production string was cut and pulled out of the hole, leaving a stub top at 3611'. It is not clear from the workover or abandonment report whether or not the 7" stub was cemented from the total depth up to 3611'. EPA's records and calculations indicate that it is not. The initial completion of the well entailed cementing the 7" casing into place at a TD of 6123' with 150 sacks of cement. In a 9" hole, the height of the cement column only reaches to approximately 5136'. Therefore, we assume that the 7" casing is uncemented from 3611' down to 5136'. Although the formations exposed in this uncemented interval are relatively impermeable (determined from the well log), the well cannot be declared to have integrity until it has been demonstrated that the perforation interval is isolated by cement.

The well was reentered in 1977 and converted to a water disposal well. The current well configuration is included as Attachment B. This schematic, as submitted by the applicant, indicates that the 7" casing is cemented from 3611' to the TD of the well. Prior to commencing injection, and within thirty (30) days of the effective date of the permit, the permittee must prove that:

1) there is a good cement bond between the 4 1/2 inch/7 inch casing annulus and; 2) there is a good cement bond between the entire 7 inch/wellbore annulus; and 3) that the plugged back total depth of 3997' has integrity. To prove that the injection zone (3630'-3830') is isolated by cement bonds, and will not allow the migration of injection fluid up or down the well bore the applicant must, prior to commencing injection, perform the following:

- 1. Injection profile by temperature survey and radioactive tracer. This profile must show unequivocally that the injection fluid moves into the Dakota Formation only through the designated perforations.
- 2. Prove (by cement bond logs and cementing records) that the 7" stub has been cemented from the TD to the top of the stub, and that the cement bond has integrity.
- 3. If the applicant cannot prove to EPA's satisfaction that the well has integrity within thirty (30) days of the effective date of the permit, then the applicant must plug and abandon the well in accordance with the plugging and abandonment plan submitted as part of the permit application (Attachment A), within sixty (60) days of the effective date of the permit.

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Because the surface casing is cemented through the Judith River Formation, 50' into the Clagget Shale, the uppermost potential USDW's are considered safe from possible contamination as long as all the cement bonds have and maintain integrity. The injection fluid should exit through the string of 2 7/8" tubing set with a packer above the perforations at 3543' and out the perforation interval of 3630'-3830'. The downhole schematic indicates that the top of the 4 1/2" casing cement is 2240'. Because the location and integrity of the cement bond is so vital to the protection of USDW's, the applicant must also supply proof that the cement top in the 9" hole-4 1/2" casing annulus is 2240', prior to commencing injection.

MONITORING DEVICE

(Condition 12)

In order to allow a representative of EPA to inspect the well and take injection pressure measurements, we are requiring that the operator install an one-half inch fitting to 1) the tubing and 2) the tubing/casing annulus.

MECHANICAL INTEGRITY

(Condition 13)

EPA will not allow injection into the Goings Government #1 well until it has been determined that the injection fluid is confined to the injection interval (3630'-3830') and that the well has mechanical integrity. The successful performance of the tests in permit condition #11 will provide adequate assurance that the injection fluid is confined to the proper interval. The mechanical integrity test is necessary to prove that there are no casing or tubing leaks that might allow migration of injection fluid outside of the injection zone.

INJECTION INTERVAL

(Condition 14)

The Dakota formation has been exempted in a 1/4 mile radius of the wellbore of the Goings Government well as a USDW. In addition, the applicant has been injecting fluid of almost 200,000 TDS into the well since May, 1977. Therefore, a representative sample of the ambient water quality of the Dakota is not possible. However, the Montana Oil and Gas Commission has indicated that USDW's in the area occur above the Bearpaw Shale. Those aquifers are protected from migration by the surface casing which is set at 1300'.

INJECTION PRESSURE

(Condition 15)

According to 40 CFR Section 147.1353, the value for maximum allowable injection pressure may be determined by using the following calculation:

$$Pm = (0.733 - 0.433 \text{ Sg})d$$

Where Pm = injection pressure at the wellhead in pounds per square inch

Sq = specific gravity of injection fluid (unitless)

d = injection depth in feet

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The specific gravity of the injection fluid, taken from the water analysis is 1.145, and the depth of the injection zone is 3830'. Using the above-referenced formula, the calculated maximum allowable injection pressure is 908 psi. The permittee has requested a maximum injection pressure of 875 psi. Therefore, the maximum pressure stated in permit condition 15 is considered safe, and is not expected to initiate any fractures in the injection or confining zones.

INJECTION RATE LIMITATION

(Condition 16)

Current practice involves the injection of an average volume of 1550 barrels per day, with a maximum volume of 3000 barrels per day. The operator may continue to inject these volumes. However, at no time may the operator inject at a higher pressure than the maximum specified in permit condition 15 in order to maintain these volumes.

MONITORING REQUIREMENTS

(Condition 19)

The permittee is required to monitor water quality of the injection fluids at reasonable intervals. A water sample of injected fluids shall be analyzed for Total Dissolved Solids, major ions, organics and Ph at quarterly intervals.

The permittee is also required to submit a comprehensive water quality analysis whenever the source of the injection fluid changes.

PLUGGING AND ABANDONMENT PLAN

(Condition 21)

The plugging and abandonment plan submitted by the applicant with the permit application is incorporated into the permit and shall be binding on the permittee. In addition, the requirement stating that the well should be abandonded in a state of static equilibrium was not addressed in the Plugging and Abandonment Plan. That condition has been incorporated into the permit by reference. The plugging and abandonment plan submitted by the applicant and included as attachment A will be considered satisfactory only after the permittee has proven that the well has been cemented in a manner consistent with EPA requirements for mechanical integrity as discussed in condition 13 of this permit.

FINANCIAL RESPONSIBILITY

(Condition 23)

Grace Petroleum Corporation holds a blanket surety performance bond (#249G1055) with the Travelers Indemnity Company of Oklahoma City for three injection wells in the East Poplar and Northwest Poplar Fields; the Goings Government #1, the Buck Elk #2, and the EPU 110-XD. The bond amount is for the total penal sum of \$60,000, securing \$20,000 for each of the three wells. Grace Petroleum has established the necessary standby trust fund with the First National Bank and Trust Company of Oklahoma City.

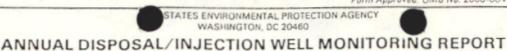
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The bond and the standby trust agreement have been reviewed and approved by EPA as acceptable evidence of financial responsibility.

The bond and standby trust agreement submitted by the permittee have been determined to provide assurance of adequate resources to plug and abandon the Goings Government #1 well, and shall be maintained for the life of the well. If after a period of one year from the effective date of this permit, the permittee applies for, and EPA determines that another means of financial assurance (e.g., financial statement) will provide adequate proof of financial responsibility, EPA may modify the permit to reflect this change.

STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460

Fort Peck



NAME AND ADDRESS OF EXISTING PERMITTEE Grace Petroleum Corporation

143 Union Blvd. - Suite 760

NAME AND ADDRESS OF SURFACE OWNER Jeanetta Elizabeth Goings Hauser

1124 Kiernan Avenue

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT - 640 ACRES

Lakewood, CO 80228



Spokane, WA PERMIT NUMBER MT521PW-0008 Roosevelt SURFACE LOCATION DESCRIPTION 14 SECTION 11 TOWNSHIP 29N RANGE 50E C WOF SE 14 OF SW LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT Surface Location 6 6 0 ft. from (N/S) S Line of quarter section and 1980 from (E/W) W Line of quarter section TYPE OF PERMIT WELL ACTIVITY M Brine Disposal M Individual ☐ Enhanced Recovery □ Area Number of Wells __1 ☐ Hydrocarbon Storage Goings Allotted Well Number Lease Name

		INJECTION F	PRESSURE	TOTAL VOLUME	INJECTED	TUBING — CASING ANNULUS PRESSURE (OPTIONAL MONITORING)		
монтн	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG	
1 -	86	300	300	35,893	0	0	0	
2 -	86	300	300	36,325	0	0	0	
3 -	86	300	300	45,418	0	0	0	
4 -	86	300	300	45,936	0	0	0	
5 -	86	310	310	43,230	0	0	0	
6 -	86	310	310	41,478	0	0	.0	

CERTIFICATION

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32).

NAME AN	DOFFICIAL	TITLE (Please	type	or print)

Raymond Reede

District Superintendent

represed fielt

DATE SIGNED